

1 Bose–Einstein Condensation (BEC)

is described as the process occurring only very close to absolute zero (for example, below 1 mK) in which a large fraction of a dilute gas of weakly interacting [bosons](#) confined in an external potential have a lowest quantum state (or states) in which their [wave functions](#) overlap; hence the name of Bose–Einstein condensate (BEC) attributed to such a [system](#) of supercooled/ultracold, weakly interacting bosons with overlapping wave functions.

The original theoretical paper was published in 1925 in *Zeitschrift fur Physik* by Satyendra Nath Bose in the German translation of [Albert Einstein](#), and followed in a few theoretical papers by Einstein himself. Recently, there have been several experimental claims reported to have observed BECs in alkali metal gases at very low [temperatures](#) (see the following selected bibliography).

For a [general introduction to BECs](#) there is also available a [related paper in PDF format](#).

1.1 Bose-Einstein condensation in the alkali gases

A fundamental theoretical paper on this subject is: “Bose-Einstein condensation in the alkali gases: Some fundamental concepts” [Rev. Mod. Phys. 73, 307 (2001)], by Anthony J. Leggett.

References

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